

# City of Riverside:

## *A Model for Local Government Recycling and Waste Reduction*

### **Overview**

The City of Riverside, designated an “All-American City” in 1998, is the seat of Riverside County in Southern California. The city, in compliance with the California Integrated Waste Management Act (AB 939, Sher, Chapter 1095, Statutes of 1989 as amended [IWMA]) met its 1995 waste diversion requirement of 25 percent. Its 2000 waste diversion requirement of 50 percent was achieved five years early and maintained. The city currently boasts a diversion rate of 57 percent.

Prior to the passage of AB 939 in 1989,\* the city had no municipally-sponsored recycling program. After passage, the city took a very proactive stance that concentrated on program development designed to achieve the diversion goals of AB 939 in the most timely and cost-effective manner. Riverside accomplished its goals in a manner somewhat unique in California by initiating its programs with the major material identified in its waste characterization study, namely green waste.

The City of Riverside worked closely with the county and the city’s three waste subcontractors in developing a full range of programs to meet its diversion responsibilities.

These include:

- Green and wood waste/composting.
- Residential curbside.
- Residential drop-off.
- MRF recovery of commercial waste.
- Concrete and asphalt.
- White goods, tires, and telephone books.
- Office paper collection.
- Economic incentives.
- Ordinances.

\*When referring only to the original waste management legislation, the term AB 939 will be used.

### **Program Characteristics**

#### ***Location***

The City of Riverside is the principal city of Riverside County and is located 53 miles east of Los Angeles in Southeast California. The county is bordered by San Bernardino County on the north and east, Los Angeles County on the west, and Orange and San Diego counties on the south. The city is served east and west by Interstate 10, north and south by Interstate 15/215, and California Route 91 (Riverside Freeway) to Orange County and Long Beach. Union Pacific, Southern Pacific, Burlington Northern/Santa Fe railroads all serve the city.

The city covers 77.179 square miles and has a population of 247,800. This represents nearly 18 percent of the county. Industrial areas in the city slated for special development efforts include Hunter Park, Airport Industrial Area, Sycamore Canyon Industrial Park, and Central Riverside.

#### ***Local Partnerships***

In carrying out its responsibility to divert material from the waste stream as required by the IWMA, the City of Riverside has cooperated fully with relevant county program efforts and with services offered by its solid waste contractors, thus avoiding any unnecessary duplication of effort.

In addition, the city supports one-half of a position with the Riverside Chamber of Commerce in the Keep Riverside Clean project. The chamber also cooperates with litter abatement and public education programs.

The City of Riverside is also a member of the West Riverside Council of Governments that includes:

- County of Riverside.
- Banning.
- Beaumont.
- Moreno Valley.
- Hemet.

- San Jacinto.
- Norco.
- Corona.
- Calimesa.
- Canyon Lake.
- Perris.
- Lake Elsinore.
- Murietta.
- Temecula.

These agencies formed a task force to deal with mutual solid waste issues.

### ***Local Policies***

The City of Riverside has taken a number of actions to facilitate the processes of waste reduction and recycling. These include:

- In 1992, shifting from twice-a-week collection of trash to once-a-week collection of trash and once-a-week collection of green waste.
- In 1994, approving section 6.05 of the municipal code, which requires that all new development projects provide adequate space and access for the separate protected storage and collection of recyclables.
- Participating with other cities and the Riverside County Waste Management Department in the establishment and operation of the county's local task force as required by the IWMA.
- Shifting to automated collection to facilitate greater citizen participation cost effectively.
- Modifying the rate structure as a disincentive to excessive trash generation.

### ***Solid Waste Services***

The mission of the solid waste systems division of the department of public works states the following:

“The Division will provide integrated waste management services to single-family residential units in the most convenient cost-effective manner possible. The Division will efficiently collect, dispose, and recycle waste materials from residents, while achieving State mandated recycling goals and upholding rules as established

in the State of California's Public Health and Safety Code.”

The City of Riverside Department of Public Works provides solid waste collection services to approximately 80 percent of the single-family households. Curbside collection at the rate of three services per week is currently provided at the monthly rate of \$16.39 for normal service. There are special additional rates for driveway or backyard service where necessary. Excessive waste generation is discouraged by additional costs if a second trash container is required. The city charges \$50 for the container and an additional \$4.92 per month for the collection fee.

The remaining 20 percent (all multifamily housing units, commercial, and industrial units) are served by three private companies franchised by the city. Only these franchised companies are allowed to provide service to commercial and industrial businesses.

The franchised companies are permitted to operate in specified zones only. The city is divided into three zones, as follows.

- Zone I—served by NEWCO.
- Zone II—served by NEWCO & TRICO.
- Zone III—served by BFI & TRICO.

Zones II and III are competitive zones. All three franchisees have their rates set annually by the Riverside City Council. The commercial and industrial rates are variable, based upon size of container provided and frequency of service. This is a common rate technique and is a cost disincentive to generating excessive waste.

The most recent rate setting was effective on July 1, 1999. A dump fee and a landfill surcharge supplement each rate. Commercial rate examples are listed in Table 1.

All solid waste collected is tipped at the Robert A. Nelson Transfer Station which is owned by the County of Riverside and operated under a 20-year franchise by Burrtec. Currently, the tipping fee is \$32.18 per ton. The waste is transferred to the Badlands Landfill for disposal.

Recently, the Riverside City Council has instructed its employees to implement a new

licensing system this year, by putting the commercial hauling franchises out to bid and to allow the lowest three or four bidders to operate at the winning low price. The city's waste hauling division may become one of the commercial haulers bound by the winning low bid prices.

**Table 1**

Container Size	Pickups Per Week	
	One	Six
40 Gallon Can	\$14.17	\$84.97
1 Cubic Yard	\$44.59	\$214.27
2 Cubic Yard	\$67.82	\$327.92
3 Cubic Yard	\$95.45	\$433.95
4 Cubic Yard	\$120.76	\$576.15
6 Cubic Yard	\$158.03	\$785.83

Concurrently, the residential hauling now carried out by the commercial franchisees will be consolidated from three zones into two districts of 9,000 homes each and put out for separate bids.

### **Source Reduction**

The principal program of waste reduction is the backyard composting program run by the county waste management department with which the city cooperates. The city offers to its citizens:

- Master composting classes and workshops.
- Backyard composting handbook (\$2.50).
- Discounted Biostack Bin (\$35.00) or Presto Bin (\$9.00).

The city encourages participation by special offerings to attend a workshop. For example, to attend a workshop in October 1999, the first 200 people with a coupon issued by the city were eligible to purchase the Biostack bin for \$20. There was also a free drawing for a \$300 mulching mower, and all attendees received a free backyard composting apron.

The city is also encouraging its residents to practice "grasscycling" as a reduction strategy. This process leaves the grass cuttings on the lawn as a mulch for soil enrichment.

It is estimated that approximately 5 percent of single-family residences engage in either of these practices.

The city offices use duplex printers and ceramic mugs, although there is no formal program of source reduction.

### **Reuse Programs**

"Think Twice: A Citizen's Guide to: Reduce, Reuse, Recycle," is published by the City of Riverside. It recommends the use of refillable products, rechargeable batteries, and reuse of plastic bags and cardboard boxes.

In its list of recyclers in the city, the following are listed for repairable appliances:

- Appliance recycling factory.
- Appliance services.
- California liquidators.
- Ken Deorto.

In addition, citizens are encouraged to hold garage sales and to sell or donate products to thrift shops, food banks, etc.

### **Diversion Rate**

The City of Riverside has enjoyed the enviable distinction of reaching the year 2000 goal of 50 percent diversion required under the IWMA fully five years earlier.

Reporting in 1999 for the 1998 year, the city had:

- A reporting year disposal amount of 245,887 tons.
- An estimated reporting year generation of 566,324 tons.
- A calculated reporting year diversion rate of 57 percent.

This result followed a diversion rate of 56.7 percent in 1997 and 52.7 percent in 1996 and 53.3 percent in 1995.

### **Curbside Collection of Recyclables**

The city did not start off its diversion efforts with a residential curbside collection as did most other communities in California. A student-led initiative brought the issue to the city council. A number of classrooms of children filled the council chambers and requested the city to develop a residential

curbside program. The city responded positively, directing its staff to study the issue and to develop a fully automated collection system. The program that was developed and approved, weekly service of an automated collection container, was achievable at an additional cost of \$1.08 per month. Although participation is voluntary, all residential units are required to pay the additional fee.

The city defines “recyclable” in section 6.04.010 of the municipal code as “. . . any paper, glass, cardboard, or any item or material that has been separated from solid waste, and has an economic value, and is deposited in a recyclable material receptacle provided by the City or in a privately owned receptacle on which the City’s official sticker is placed designating said receptacle to be recyclable material for the City to collect.”

In its information material, these items are further described as follows.

**Paper:**

- Newspapers
- Junk mail
- Magazines
- Cardboard
- Catalogs and brochures
- Cereal boxes
- Coupons
- Food packaging
- Computer paper
- Paper cartons
- Grocery bags
- Used envelopes
- Tissue boxes
- Phone books
- Wrapping paper

**Plastic containers:**

- Assorted plastics #1–2
- Soda bottles
- Laundry products containers

- Shampoo bottles
- Lotion bottles
- Water/milk jugs
- Antifreeze bottles
- Plastic motor oil containers

**Glass:**

- Food and beverage containers
- Soda bottles
- Beer bottles
- Juice containers
- Catsup bottles
- Wine/liquor bottles

**Metals:**

- Metal food cans
- Aluminum
- Metal coat hangers
- Tin cans
- Pet food cans
- Milk/juice cartons

Although there is some redundancy in the above descriptions, the categories show that the public tends to identify materials in different ways. City staff members believe this redundancy enhances public understanding and compliance.

The materials listed above are commingled in the blue container. Set out for collection is encouraged only when the container is full. Blue container recyclables are tipped at the Robert A. Nelson Transfer Station and transferred to a Burrtec intermediate processing facility. The city pays a \$3.00-per-ton tip fee for the recyclables delivered by all residential curbside collectors.

Residential diversion through curbside recycling reached 24 percent overall in fiscal year 1998–99 with a total collection of 19,526 tons.

Individual collectors contributed the amount shown in Table 2.

**Table 2**

Collector	Tons
City of Riverside	11,614
NEWCO	5,551
TRICO	1,578
BFI/USA	783

***Green Waste Collection***

As previously indicated, the city took the unusual but highly successful step of initiating green waste collection as the first program geared to attain the diversion goals of the IWMA. Switching from twice-a-week collection of trash to once-a-week collection of trash and green waste allowed the attainment of significant diversion without an increase in operating cost. The green waste allowable includes:

- Plants.
- Grass.
- Weeds.
- Leaves.
- Tree limbs.
- Wood waste.
- Christmas trees (when cut in 4-foot lengths at specified times in January).

These are placed in the green automated collection container. The green waste is delivered and tipped at the Inland Empire Composting facility at a rate of \$12.60 per ton.

There is nearly a \$20-per-ton savings as compared with the trash disposal fee of \$32.18 per ton.

For the 1998–99 fiscal year, the residential green waste collectors obtained a 42 percent diversion rate, recovering 43,807 tons. At a saving of \$19.55 per ton in tipping fees, this resulted in a savings of \$856,427.

A reduced commercial rate for separated loads of green waste has been set by the city. Large generators could save as much as 60 percent of disposal costs. The city reports that the commercial haulers collect some separated loads of green waste, but more precise data is not available.

The green waste is either composted or converted to mulch. Riverside residents may secure some of this material without charge, but the number of residents taking material is unknown.

***Newspaper Drop-Off***

In addition to its curbside collection of old newspapers, the city, in co-sponsorship with the local Press-Enterprise, maintains eight 24-hour drop-off sites for newspapers. Each site has a recycled plastic barn to house the paper. The sites are:

- Lucky Food, 10471 Magnolia.
- Big 5 Center, 6491 Magnolia.
- Smith Foods, 4210 Van Buren.
- Adams Plaza, 3520 Adams.
- Canyon Crest Towne Center, 55 Canyon Crest Drive.
- Pine Center, 4620 Pine.
- Mission Grove Plaza, 315 E. Alessandro.
- Stater Bros. Market, 6160 Arlington.

These sites provide added convenience to residents who may or may not participate in collection at home.

***Buyback Centers***

As of 1998, there were 116 buyback centers listed for the City of Riverside, including CRV locations, scrap dealers, and used appliance buyers. These are listed on the Riverside County Web site for the convenience of the public.

***Used Oil Recycling***

The city lists eight certified used oil recycling locations as follows:

- Minit-Lube, 3693 La Sierra.
- Grease Monkey, 7437 Arlington.
- Grease Monkey, 3399 Arlington.
- Kamal's Mobil, 6608 Indiana.
- Jiffy Lube, 2634 Alessandro.
- Purrfect Auto, 4811 Van Buren.
- Firestone, 4199 Market.
- Firestone, 10091 Magnolia.

In addition, with the aid of a grant from the CIWMB of more than \$76,000, the city engages in public outreach and provision of used oil containers. As an example, working with the school districts, the city sponsored a football game for each one of its nine high schools. The city distributed more than 5,000 used oil containers and items such as tote bags, rally towels, or sports cushions with school logos and the State used oil recycling logo. The city also carried this outreach to the University of California Riverside, California Baptist University, Riverside Community College, and La Sierra University.

### ***Construction and Demolition Recycling***

Much of the concrete, dirt and rock, and asphalt generated in the city is diverted to recycling as a consequence of county and city actions. These actions were specified in a 1994 request to the California Integrated Waste Management Board (CIWMB) to count certain inert solids in the diversion statistics based upon documentation of relevant local actions.

The principal local action taken was the continual raising of county landfill tipping fees for this material. This created a substantial cost saving incentive for generators to deliver the material to private contractors for recycling at a significantly reduced tipping fee.

The other significant local action was taken by the city in modifying its street rehabilitation project bids to include language that “contractor shall primarily use the residue produced from the grinding operations or the crushing of removed asphalt pavement, as long as the material complies with the specifications and that the graduation requirements shall meet those specified in section 200-2” as identified in the Standard Specifications for Public Works Construction Book, 1988 Edition.

As a result of these actions and a comprehensive source reduction and recycling element (SRRE), the CIWMB allowed the use of an annual diversion credit of 78,000 tons for this material.

### ***White Goods***

In addition to the listings for companies that repair white goods, the local utility now contracts with a private company to pick up relevant white goods for removal of freon. Non-freon white good are taken by scrap metal companies for recycling.

### ***Household Hazardous Waste***

The city, in cooperation with Riverside County, offers both a permanent drop-off site at 8095 Lincoln Avenue and periodic mobile collections for a variety of household hazardous waste (HHW). A county site at 6851 Van Buren will also accept antifreeze, batteries, oil, and paint. Materials permitted are:

- Waste oil.
- Waste paint.
- Old pesticides.
- Cleaning solvents.
- Corrosive liquids.
- Automotive batteries.

These must be delivered in 5-gallon or smaller containers and cannot exceed 50 pounds per trip.

Unacceptable materials include:

- Explosives.
- Infectious waste.
- Radioactive materials.
- Extremely hazardous wastes.
- Hazardous wastes from commercial businesses or nonprofit organizations.

### ***Tires***

The city offers a “car tire amnesty program” in conjunction with collections of household hazardous wastes. City residents are allowed to bring up to four used auto tires to these collection events. Truck tires and tires from commercial sources are not acceptable. A company that recycles them into a crumb rubber product takes the tires received at these events.

### ***Commercial and Institutional Recycling***

Up to now, the city has not directly engaged in commercial collection and recycling. It does proactively encourage its private commercial haulers to provide recycling services.

- Private haulers evaluate their high volume customers waste for minimization and recycling. One example of positive results is Baxter Healthcare, which has switched to machinery producing less waste and now requires vendors to ship to them in reusable plastic containers.

- Private haulers collect old newspapers, office paper, metals, cardboard, and glass from more than 100 commercial customers. There is a rate incentive in that landfill disposal fees are waived.
- Private haulers also collect newspaper, metals, cardboard, yard waste, and glass from multifamily complexes. These customers benefit as well from a waiver of landfill disposal fees.
- There is a modest amount of off-the-floor sorting of recyclables at the transfer station, although it is not quantifiable at this time.

The city also has an office paper recycling program ongoing in city hall. This program is operated by a nonprofit organization, Ability Counts, which utilizes mentally challenged workers.

### ***Outreach and Education***

The city is involved in extensive outreach and education activities with respect to the three R's (reduce, reuse, recycle) in particular and to a more sustainable environment in general. The city acts independently and in conjunction with a variety of institutions including:

- The County of Riverside.
- The city chamber of commerce.
- The West County Council of Governments.
- The local school districts.
- The local colleges and universities.

The principal activities beyond those already described previously include:

- **Procurement Policy.** In 1992 the city council approved a policy that authorized the purchasing manager to allow for a 10 percent purchase preference for materials containing recycled content.
- **Awards and Recognition.** The city participates in the county's awards and recognition program by nominating worthy organizations and individuals for their efforts and successes in waste reduction.
- **Publications, Brochures, Inserts.** The city's main publication is called "Think Twice: A Citizen's Guide to: Reduce, Reuse, Recycle."

It is distributed to all residents along with an information magnet for the refrigerator. It is primarily distributed as a door hanger.

Other city brochures include the following titles:

- "One Day A Week Automated Refuse Collection."
- "Curbside Recycling Program."
- "Removal of Commercial and Industrial Waste in the City of Riverside."
- "Bulky Item Pickup by Appointment" (also printed in a Spanish edition).

Utility bill inserts include such subjects as HHW collection notices, composting workshop notices, holiday season recycling, and holiday trash collection schedules.

Note: All the printing noted above is carried out routinely using recycled paper.

- **Recycling Market Development Zone.** The city is a member of the Agua Mansa Recycling Market Development Zone as approved by the CIWMB. This zone is also part of the county's enterprise zone.

The RMDZ is designed to offer loan benefits to companies that utilize recycled feedstock to manufacture products. Although the city has not had a candidate for this program in the recent past, the zone membership presents an ongoing opportunity to the city for relevant business development.

### ***Costs and Benefits***

All activities of the city related to solid waste derive their funding from the budget of the department of public works. The solid waste systems portion of the budget is an enterprise fund. The revenues received into this fund are legally restricted and cannot be used to finance general purpose services. Revenues for this fund are derived primarily from user fees.

The solid waste systems budget is comprised of three main subdivisions (collection, refuse disposal, and private hauler).

The total budget for 1998–99 was \$10,903,263 and approved for 1999–2000 in the amount of \$11,452, 909 for a projected increase of 5 percent.

**Collection.** This subdivision includes all personnel and non-personnel expenses, equipment outlay, debt service, and charges to and from other. Although there is another subdivision called refuse disposal, the city's collection service refuse disposal charges are included under the non-personnel expenses here.

**Refuse Disposal.** This subdivision has nothing to do with existing programs and is essentially related to the annual costs for monitoring and testing at the closed Tequesquite Sanitary Landfill.

**Private Hauler.** This subdivision includes non-personnel expenses and special projects that cover disposal fees paid by the city for the private hauler single-family residential waste service and the service fees collected by the city from residents for payment to the private haulers.

**Table 3**

Budget	1998–99	1999–2000
Collection	7,302,032	7,396,705
Refuse disposal	1,163,231	1,398,181
Private hauler	2,438,000	2,658,023

The budget is relatively stable and noted increases seem to be related to population growth.

## Challenges and Opportunities

Riverside is a good example of an urban area that has worked hard to meet the requirements of the IWMA. Riverside demonstrates that cities with public collection services are able to meet the challenges of the IWMA as well as any other community.

Given that the city has already attained its year 2000 diversion goal, it is noteworthy that Riverside continues to explore improvements beyond current achievements. Opportunities are proposed below for how the City of Riverside (and other cities following their example) could increase waste diversion further.

### *Increasing Residential Curbside Participation*

The city hopes to increase this participation by 5 percent during the current year. Riverside will be

trying more things to promote recycling in diverse communities (see related CIWMB model study in this series, “Serving Diverse Populations With Recycling”). Increased outreach through the schools would be particularly effective given the positive roles that school children have played at all levels. Volunteer block captains to enlist those not presently participating would be helpful.

Since the city will be seeking new bids for private residential service this year, it has an opportunity to require a substantial plan for promoting participation in curbside as part of the bid package.

### *Increasing Commercial Waste Reduction, Reuse, and Recycling*

This area is by far the least developed in Riverside and, consequently, presents the best opportunity for substantial gains in reducing disposal tonnages. Suggestions include:

- Develop a waste audit team to proactively contact large commercial, industrial, and institutional generators in the city.
- Design and implement a more substantial recovery system at the Nelson Transfer Station (together with the County of Riverside and Burrtrec).
- Require prospective commercial haulers to submit a plan for maximizing reduction, reuse, and recycling.
- Require businesses to: 1) Develop recycling plans; 2) Achieve a 50 percent waste diversion rate; 3) Source-separate their recyclable materials (see companion CIWMB model study, “Business Recycling Plans and Policies”).
- Require commercial haulers to: 1) Develop recycling plans; 2) Achieve a 50 percent waste diversion rate; 3) Collect materials source-separated by businesses.
- Restructure franchise fees for commercial haulers to provide more economic incentives for haulers to increase recycling (see companion CIWMB model study, “Incentive Programs for Local government Recycling and Waste Reduction”).



### ***Increasing Backyard Composting and Grasscycling***

In cooperation with the county's program, the city should explore ways to increase participation beyond the present estimated 5 percent. Again, it may be useful to look to students in the schools as the vehicle for change at home.

### **Tips for Replication**

- Examine your waste stream to determine if you are concentrating on the major elements such as green waste.
- If you are not already in a regional or subregional grouping, explore cooperative opportunities to achieve economies of scale and reduce costs.
- Contact public, private, and nonprofit groups (for example, schools and chambers of commerce) to form mutually beneficial alliances to achieve more waste reduction, reuse, recycling, or composting.
- Use competition to improve recycling services.

### **References**

#### ***Contact***

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#### ***Web sites***

[www.ci.riverside.ca.us](http://www.ci.riverside.ca.us)  
[www.ci.riverside.ca.us/pworks/waste.html](http://www.ci.riverside.ca.us/pworks/waste.html)  
[www.ci.riverside.ca.us/pworks/info/compost.html](http://www.ci.riverside.ca.us/pworks/info/compost.html)  
[www.ci.riverside.ca.us/pworks/info/phonebook.html](http://www.ci.riverside.ca.us/pworks/info/phonebook.html)  
[www.ci.riverside.ca.us/pworks/info/hazard.html](http://www.ci.riverside.ca.us/pworks/info/hazard.html)  
[www.wmd.co.riverside.ca.us](http://www.wmd.co.riverside.ca.us)  
[www.rivcowm.org/Recycling/recyc\\_resources.htm](http://www.rivcowm.org/Recycling/recyc_resources.htm)  
[www.rivcowm.org/Recycling/composting\\_main\\_page.htm](http://www.rivcowm.org/Recycling/composting_main_page.htm)  
[www.rivcowm.org/Recycling/composting\\_bin\\_purchase.htm](http://www.rivcowm.org/Recycling/composting_bin_purchase.htm)

### ***CIWMB Publications***

Many CIWMB publications are available on the Board's Web site at: [www.ca.gov/Publications/](http://www.ca.gov/Publications/).

To order hard copy publications, call 1-800-CA-Waste (California only) or (916) 341-6306, or write:

California Integrated Waste Management Board  
 Public Affairs Office,  
 Publications Clearinghouse (MS-6)  
 1001 I Street  
 P.O. Box 4025 (mailing address)  
 Sacramento, CA 95812-4025

### ***Other Publications***

"Program Listing for Riverside, January 19, 2000," from Office of Local Assistance, CIWMB.

"Think Twice: A Citizen's Guide to: Reduce, Reuse, Recycle," a publication of the City of Riverside.

### **Credits and Disclaimer**

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The statements and conclusions in this case study are those of the contractor and not necessarily those of the Board, its employees, or the State of California. In addition, the data in this report was provided by local sources but not independently verified. The State and its contractors make no warranty, express or implied, and assume no liability for the information contained in this text. Any mention of commercial products, companies or processes shall not be construed as an endorsement.

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